

REMARKS

The Examiner has rejected claims 1 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Kokichi JP Publication No. 62-196820 in view of Blalock U.S. Patent No. 5,514,246. Claim 9 is rejected under § 103(a) as being unpatentable over Kokichi in view of Blalock, and further in view of Hatano et al. U.S. Patent No. 5,709,757. Claims 2-4, 10-12 and 16 are rejected under § 103(a) as being unpatentable over Kokichi in view of Blalock, and further in view of Parkhe et al. U.S. Patent No. 5,886,865. Claims 5 and 13 are rejected under § 103(a) as being unpatentable over Kokichi in view of Blalock and Parkhe et al., and further in view of Ghanayem et al. U.S. Patent No. 6,174,373. Claim 17 is rejected under § 103(a) as being unpatentable over Kokichi in view of Blalock, and further in view of Hatano et al. Claims 6-7, 14-15, 18-24, 28-29, 32-37 and 42-43 are withdrawn from consideration and claims 25-27, 30-31 and 44-45 are canceled. The following remarks are respectfully submitted.

Regarding paragraph 2 of the Detailed Action in which Examiner advises that if claims 2-5 are found allowable, claims 10-13 will be objected to as substantial duplicates, Applicants urge Examiner to reconsider that position. Claims 2-5 are directed to a Group, specifically "system components," in which 3 members or species of the group are listed as within the scope of the Group. Claims 10-13 are directed to a single member of the Group, specifically the process tube. Thus, claims 10-13 are narrower in scope than claims 2-5, not merely a slight rewording of the same scope. This manner of narrowing claims is quite common with genus and species. Patent Applications often claim a genus in one claim, and a species of the genus in another claim, and such claim practice has quite consistently been viewed as broad scope versus narrower scope. Thus, the objection, if made, will be inappropriate, and Applicants respectfully request Examiner to reconsider in the event the claims are found to be allowable.

Regarding the rejection of claims 1 and 8 over Kokichi in view of Blalock, Applicants traverse. Claim 1 recites "applying RF power to a system component" wherein the system component is selected from the substrate holder, the substrate holder support, or the process tube. Claim 8 depends directly from claim 1. In Kokichi, the power is applied to

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electrodes 9a, 9b that are arranged outside the process tube (reaction pipe 5), not to the process tube itself. Applicants' claims recite a direct application of the power to the process tube, i.e., the process tube is the electrode. The claimed element is not taught or suggested by a reference that applies power to another component other than the recited system components. Applicants' invention provides direct plasma right in the process tube by directly powering the process tube or the substrate holder or substrate holder support, which reside in the process tube, so that there is no transfer of power or plasma from an indirect source and no resulting loss of effectiveness in terms of cleaning power of the plasma.

Blalock discloses a capacitive coupling plate 26 external to the process chamber and an internal electrode 22 that may be coupled to a bias power source 24 for anisotropic etching of a wafer and grounded during a cleaning process. A full reading of the reference reveals that during etching of a wafer, an inductive coupling effect is created by powering the conductive coils 18 that reside outside the process tube while switching plate 26 to ground 32 to serve as an electrostatic shield plate (see col. 3, lines 52-59; col. 3, line 64 to col. 4, line 23; col. 4, lines 58-66). At this time, for anisotropic etching, the electrode 22 can be biased by bias power source 24 (see col. 3, lines 60-63). After etching, the wafer is removed (see col. 4, line 66 to col. 5, line 6). For cleaning the system, plate 26 is switched to power source 34 and electrode 22 is grounded to produce a capacitive coupling effect (see col. 4, lines 35-38; col. 5, lines 1-6). Power may or may not be applied to coils 18 (see col. 4, lines 49-57). The reference, as a whole, reveals that power is only applied to the substrate holder (electrode 22) during etching of the wafer to bias the wafer for anisotropic etching. During the cleaning process, the substrate holder is grounded. Like Kokichi, for a system cleaning process, power is applied to a component outside the process tube, here inductive coils 18. There is no teaching or suggestion in the combination of the Kokichi and Blalock references to apply power directly to the process tube, the substrate holder or the substrate holder support during a system cleaning process in a batch-type processing system. Further, one skilled in the art would not be led to modify Kokichi in the manner suggested because Blalock teaches that the internal electrode should be grounded during system cleaning to produce a

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capacitive coupling effect. Therefore, it is contrary to the teachings of Blalock to power the electrode during cleaning, and thus Blalock would not suggest such a modification to Kokichi. Therefore, Examiner has not established a proper *prima facie* case of obviousness for claims 1 and 8, and it is respectfully requested that the rejection be withdrawn.

Regarding the rejection of claim 9 over Kokichi in view of Blalock, and further in view of Hatano et al., the arguments presented above for claims 1 and 8 apply to this rejection as if fully set forth again. Claim 9 depends from claim 8. The further combination of Hatano et al. does not cure the deficiencies set forth above for claim 8, and therefore, there is no *prima facie* case of obviousness for claim 9. It is respectfully requested that the rejection be withdrawn.

Regarding the rejection of claims 2-4, 10-12 and 16 over Kokichi in view of Blalock, and further in view of Parkhe et al., the arguments presented above for claims 1 and 8 apply to this rejection as if fully set forth again. Claims 2-4 depend from claim 1, directly or indirectly. Claim 10 is an independent claim directed to one of the three system components recited in the group of system components of claim 1 and further including the element of claim 2, and is thus a narrower species claim to the broader genus claim 2. Specifically, claim 10 and its dependent claims 11-12 and 16 are directed to powering the process tube. The arguments presented above for claims 1 and 8 apply to this rejection as if fully set forth again. Neither Kokichi nor Blalock teach or suggest applying power to the process tube. Examiner does not assert that Parkhe et al. teaches that element, but instead applies Parkhe et al. for another purpose. Applicants assert that Parkhe et al. do not cure the deficiency of the combination of Kokichi and Blalock, as Parkhe et al. also do not teach or suggest applying power to a process tube since their apparatus lacks the teaching of a process tube as defined by the present claims. Therefore, Examiner has not established a proper *prima facie* case of obviousness for claims 2-4, 10-12 and 16, and it is respectfully requested that the rejection be withdrawn.

Regarding the rejection of claims 5 and 13 over Kokichi in view of Blalock and Parkhe et al., and further in view of Ghanayem et al., the arguments presented above for claims 1 and 10 apply to this rejection as if fully set forth again. Claims 5 and 13 depend indirectly from

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claims 1 and 10. Again, the added reference, Ghanayem et al., does nothing to cure the deficiency of the other combination of references, namely the lack of teaching or suggestion of powering the recited system component. Therefore, Examiner has not established a proper *prima facie* case of obviousness for claims 5 and 13, and it is respectfully requested that the rejection be withdrawn.

Regarding the rejection of claim 17 over Kokichi in view of Blalock, and further in view of Hatano et al., the arguments presented above for claims 1, 9 and 10 apply to this rejection as if fully set forth again. Because claim 17 depends indirectly from claim 10 and directly from claim 16, the rejections of which included Parkhe et al. in the combination of references, it would seem that Parkhe et al. should have been cited in the rejection of claim 17 as well. In any event, neither Hatano et al. nor Parkhe et al. cure the deficiencies of Kokichi in view of Blalock, as neither teaches or suggests powering the process tube. Therefore, Examiner has not established a proper *prima facie* case of obviousness for claim 17, and it is respectfully requested that the rejection be withdrawn.

In view of the remarks given herein, Applicants respectfully believe this case is in condition for allowance and respectfully request allowance of the pending claims. If the Examiner believes any detailed language of the claims requires further discussion, the Examiner is respectfully asked to telephone the undersigned attorney so that the matter may be promptly resolved. The Examiner's prompt attention to this matter is appreciated.

Applicants are of the opinion that no additional fee is due as a result of this Amendment. If any charges or credits are necessary to complete this communication, please apply them to Deposit Account No. 23-3000.

Respectfully submitted,
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